

## WHAT IS CLAIMED IS:

1. A data processing system having a storage device for recording data which belongs to an object representing a target event, in which one or more tables are stored in the storage device, each of the tables defining the number of data recordable areas, and each of the objects and recording areas in each table individualized by an identifier capable of taking numerical form, said system comprising:

specification means for specifying an identifier related to the data concerned and the number of recording areas of the table to be accessed in response to a data accessing request; and

range of area determining means for determining the range of recording areas in the table to be accessed by executing a predetermined computational algorithm which uses as variable factors at least the identifier and the number of recording areas specified by said specification means.

2. A data processing system having a storage device for recording data which belongs to an object representing a target event, in which one or more tables are stored in the storage device, each of the tables defining the number of data recordable areas, and each of the objects and recording areas in each table individualized by an identifier capable of taking numerical form, said system comprising:

a data recording module for accessing said storage device and recording data in recording areas of any one of tables in response to input of the data concerned and a data recording request, and a data retrieval module for accessing said storage device and retrieving the data concerned from one of the tables in response to a retrieval request, wherein

one of said data recording and retrieval modules is configured to

specify an identifier related to the data to be targeted and the number of recording areas of the table to be accessed, determine the range of recording areas in the table to be accessed by executing a predetermined computational algorithm which uses as variable factors at least the  
5 identifier and the number of recording areas specified, and access the range of areas determined.

3. The data processing system according to claim 1, wherein  
said specification means specifies an object identifier (M) and the number or recording areas (N) per customer of the table to be accessed,  
10 and

said range of area determining means determines the range or recording areas capable of being accessed in the table concerned by executing the following computational algorithm from the identifier (M) and the number of recording areas (N) specified:

15 
$$N * [M - 1] + 1 \sim N * M,$$

where the term inside the square brackets indicates an integral value calculated by a Gauss function.

4. The data processing system according to claim 1, wherein,  
said specification means specifies an identifier ( $\alpha a$ ) of a recording  
20 area of a first table in which data belonging to the target object is to be recorded, as well as the number of recording areas ( $N_a$ ) per object of the first table and the number of recording areas ( $N_b$ ) per object of a second table in which data associated with the first object by the target object are to be recorded, and

25 said range of area determining means determines the range of data recording areas capable of being accessed in the second table by executing the following computational algorithm from the identifier ( $\alpha a$ ) and the

respective numbers of recording areas (Na, Nb):

$$[\alpha a / N_a] * N_b + 1 \sim [\alpha a / N_a + 1] * N_b,$$

where the term inside the square brackets indicates an integral value calculated by a Gauss function.

- 5           5. The data processing system according to claim 1, further comprising:

means for accepting a table join request for joining first and second tables associated with each other by an object and retrieval conditions therefor;

- 10           means for decomposing the accepted retrieval conditions on a table basis; and

retrieval means for executing the table join request accepted, wherein

- 15           said specification means specifies an identifier ( $\alpha a$ ) of a corresponding recording area from the first table on the basis of the retrieval condition decomposed for the first table, as well as the number of recording areas (Na) per object of the first table and the number of recording areas (Nb) per object of the second table,

- 20           said range of area determining means determines the range of recording areas to be retrieved in the second table by executing the following computational algorithm from the identifier ( $\alpha a$ ) and the respective numbers of recording areas (Na, Nb):

$$[\alpha a / N_a] * N_b + 1 \sim [\alpha a / N_a + 1] * N_b,$$

- 25           where the term inside the square brackets indicates an integral value calculated by a Gauss function, and

said retrieval means performs data retrieval processing for the range of recording areas determined by said range of area determining

means according to the retrieval condition for the second table.

6. The data processing system according to claim 1, further comprising:

5 means for accepting a table join request for joining first and second tables associated with each other by an object and retrieval conditions therefor;

means for decomposing the accepted retrieval conditions on a table basis; and

10 retrieval means for executing the table join request accepted, wherein

15 said specification means specifies an identifier ( $\alpha$ ) of a corresponding recording area from the first table on the basis of the retrieval condition decomposed for the first table, as well as the number of recording areas ( $N_a$ ) per object of the first table and the number of recording areas ( $N_b$ ) per object of the second table,

said range of area determining means determines the range of recording areas to be retrieved in the second table by executing the following computational algorithm from the identifier ( $\alpha$ ) and the respective numbers of recording areas ( $N_a$ ,  $N_b$ ):

20 
$$[\alpha/N_a] * N_b + 1 \sim [\alpha/N_a + 1] * N_b,$$

where the term inside the square brackets indicates an integral value calculated by a Gauss function, and

25 said retrieval means performs data retrieval processing according to the retrieval condition for the second table to determine the logical product of the identifier of a recording area obtained in the retrieval processing and the identifiers of all the recording areas of the range determined by said range of area determining means so as to specify

recording areas in which data according to all the retrieval conditions are to be recorded.

7. The data processing system according to claim 1, wherein the recording areas are formed consecutively in each individual table on a row or column basis, and the identifier is a row or column number in the table concerned.

8. A data processing method for use in a computer system having a storage device for recording data which belongs to an object representing a target event, in which one or more tables are stored in the storage device on an object basis, each of the tables defining the number of data recordable areas, and each of the objects and recording areas in each table individualized by an identifier capable of taking numerical form, said method comprising the steps of:

specifying an identifier related to the data concerned and the number of recording areas of the table to be accessed in response to an access request for the data containing identification information for identifying the object; and

determining the range of recording areas in the table to be accessed by executing a predetermined computational algorithm which uses as variable factors at least the identifier and the number of recording areas specified by said specification means.

9. A computer-readable recording medium on which a computer program is recorded, the computer program being used in a computer system having a storage device for recording data which belongs to an object representing a target event, in which one or more tables are stored in the storage device on an object basis, each of the tables defining the number of data recordable areas, and each of the objects and recording

areas in each table individualized by an identifier capable of taking numerical form, said computer program executing the following processing steps of:

5 specifying an identifier related to the data concerned and the number of recording areas of the table to be accessed in response to an access request for the data containing identification information for identifying the object; and

10 determining the range of recording areas in the table to be accessed by executing a predetermined computational algorithm which uses as variable factors at least the identifier and the number of recording areas specified.

10. A computer program for use in a computer system having a storage device for recording data which belongs to an object representing a target event, in which one or more tables are stored in the storage device  
15 on an object basis, each of the tables defining the number of data recordable areas, and each of the objects and recording areas in each table individualized by an identifier capable of taking numerical form, said program constructing:

20 specification means for specifying an identifier related to the data concerned and the number of recording areas of the table to be accessed in response to a data accessing request for the data containing identification information for identifying the object; and

25 range of area determining means for determining the range of recording areas in the table to be accessed by executing a predetermined computational algorithm which uses as variable factors at least the identifier and the number of recording areas specified by said specification means.